

## SEQUENCE LISTING

## (1) GENERAL INFORMATION:

## 5 (i) APPLICANT:

- (A) NAME: bioMérieux B.V.
- (B) STREET: Postbus 84
- (C) CITY: Boxtel
- (E) COUNTRY: The Netherlands
- 10 (F) POSTAL CODE (ZIP): 5280 AB

(ii) TITLE OF INVENTION: Nucleic acid sequences that can be used as primers and probes in the amplification and detection of SARS Coronavirus.

15

(iii) NUMBER OF SEQUENCES: 47

## (iv) COMPUTER READABLE FORM:

- (A) MEDIUM TYPE: Floppy disk
- 20 (B) COMPUTER: IBM PC compatible
- (C) OPERATING SYSTEM: PC-DOS/MS-DOS
- (D) SOFTWARE: PatentIn Release #1.0, Version #1.25

(EPO)

## 25 (2) INFORMATION FOR SEQ ID NO: 1:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 134 base pairs
- (B) TYPE: nucleic acid
- 30 (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

35

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:  
TACCTCTCCA GCTAGGATT TCTACAGGTG TTAACCTAGT AGCTGTACCG  
ACTGGTTATG TTGACACTGA AAATAACACA GAATTACCA GAGTTAATGC  
5 AAAACCTCCA CCAGGTGACC AGTTAAACA TCTT 134

(2) INFORMATION FOR SEQ ID NO: 2:

(i) SEQUENCE CHARACTERISTICS:

10 (A) LENGTH: 89 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

15 (ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:

ATGAATTACC AAGTCAATGG TTACCCATAAT ATGTTTATCA CCCGCGAAGA  
20 AGCTATTCTGT CACGTTCTGT CGTGGATTGG CTTTGATGT 89

(2) INFORMATION FOR SEQ ID NO: 3:

(i) SEQUENCE CHARACTERISTICS:

25 (A) LENGTH: 28 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

30 (ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:

TCCACCAGGT GACCAGTTA AACATCTT 28

## (2) INFORMATION FOR SEQ ID NO: 4:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 26 base pairs
- 5 (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA

10 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:

TAGTAGCTGT ACCGACTGGT TATGTT 26

## 15 (2) INFORMATION FOR SEQ ID NO: 5:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 23 base pairs
- 20 (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA

25 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:

TACCTCTCCA GCTAGGATTT TCT 23

## (2) INFORMATION FOR SEQ ID NO: 6:

30 (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 24 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- 35 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:

5

ATGAATTACC AAGTCAATGG TTAC 24

(2) INFORMATION FOR SEQ ID NO: 7:

10 (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

15

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:

20 GAAGCTATTC GTCACGTTCG 20

(2) INFORMATION FOR SEQ ID NO: 8:

(i) SEQUENCE CHARACTERISTICS:

25

- (A) LENGTH: 21 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

30 (ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:

TGCGTGGAATT GGCTTTGATG T 21

35

## (2) INFORMATION FOR SEQ ID NO: 9:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 53 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA

10

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:

AATTCTAATA CGACTCACTA TAGGGAAGAT GTTTAACTG GTCACCTGGT GGA 53

## 15 (2) INFORMATION FOR SEQ ID NO: 10:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 51 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA

## 25 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:

AATTCTAATA CGACTCACTA TAGGGAACAT AACCAAGTCGG TACAGCTACT A 51

## (2) INFORMATION FOR SEQ ID NO: 11:

30

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 48 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

35

5 (ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:

AATTCTAATA CGACTCACTA TAGGGAGAAA ATCCTAGCTG GAGAGGTA 48

10 (2) INFORMATION FOR SEQ ID NO: 12:

15 (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 56 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

15 (ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:

20 GTTCGTGCGT GGATTGGCTT TGATGTAGAG GGCTGTCATG CAACTAGAGA  
TGCTGT 56

25 (2) INFORMATION FOR SEQ ID NO: 13:

30 (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 38 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

30 (ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:

35 CCATGGGCTG TCATGCAACT AGAGATGCTG TCCCATGG 38

(2) INFORMATION FOR SEQ ID NO: 14:

(i) SEQUENCE CHARACTERISTICS:

5 (A) LENGTH: 53 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

10 (ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 14:

TCAGCCCCAG ATGGTACTTC TATTACCTAG GAACTGGCCC AGAAGCTTCA

15 CTT 53

(2) INFORMATION FOR SEQ ID NO: 15:

(i) SEQUENCE CHARACTERISTICS:

20 (A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

25 (ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 15:

TCAGCCCCAG ATGGTACTTC T 21

30

(2) INFORMATION FOR SEQ ID NO: 16:

(i) SEQUENCE CHARACTERISTICS:

35 (A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

5 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 16:

TAGGAACCTGG CCCAGAAGCT TCACTT 26

(2) INFORMATION FOR SEQ ID NO: 17:

10

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 123 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

15

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 17:

20

AGGTTTACCC AATAATACTG CGTCTTGGTT CACAGCTCTC ACTCAGCATG  
GCAAGGAGGA ACTTAGATTC CCTCGAGGCC AGGGCGTTCC AATCAACACC  
AATAGTGGTC CAGATGACCA AAT 123

25 (2) INFORMATION FOR SEQ ID NO: 18:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 23 base pairs

(B) TYPE: nucleic acid

30

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

35 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 18:

AGGTTTACCC AATAATACTG CGT 23

(2) INFORMATION FOR SEQ ID NO: 19:

5

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 23 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

10

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 19:

15

AGATTCCCTC GAGGCCAGGG CGT 23

(2) INFORMATION FOR SEQ ID NO: 20:

20

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 22 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

25

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 20:

30 ATAGTGGTCC AGATGACCAA AT 22

(2) INFORMATION FOR SEQ ID NO: 21:

(i) SEQUENCE CHARACTERISTICS:

35

- (A) LENGTH: 628 base pairs

- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

5 (ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 21:

GGCTACTACC GAAGAGCTAC CCGACGAGTT CGTGGTGGTG ACGGCAAAAT  
10 GAAAGAGCTC AGCCCCAGAT GGTACTTCTA TTACCTAGGA ACTGGCCCAG  
AAGCTTCACT TCCCTACGGC GCTAACAAAG AAGGCATCGT ATGGGTTGCA  
ACTGAGGGAG CCTTGAATAC ACCCAAAGAC CACATTGGCA CCCGCAATCC  
TAATAACAAT GCTGCCACCG TGCTACAAC TCCCTCAAGGA ACAACATTGC  
15 CAAAAGGCTT CTACGCAGAG GGAAGCAGAG GCGGCAGTCA AGCCTCTTCT  
CGCTCCTCAT CACGTAGTCG CGGTAATTCA AGAAATTCAA CTCCTGGCAG  
CAGTAGGGGA AATTCTCCTG CTCGAATGGC TAGCGGAGGT GGTGAAACTG  
CCCTCGCGCT ATTGCTGCTA GACAGATTGA ACCAGCTTGA GAGCAAAGTT  
TCTGGTAAAG GCCAACAAACA ACAAGGCCAA ACTGTCACTA AGAAATCTGC  
TGCTGAGGCA TCTAAAAAGC CTCGCCAAAA ACGTACTGCC ACAAAACAGT  
20 ACAACGTCAC TCAAGCATTG GGGAGACGTG GTCCAGAACAA AACCCAAGGA  
AATTCGGGG ACCAAGACCT AATCAGACAA 630

(2) INFORMATION FOR SEQ ID NO: 22:

25 (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 39 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

30

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 22:

35 CCATGGGCTA CTACCGAAGA GCTACCCGAC GACCCATGG 39

## (2) INFORMATION FOR SEQ ID NO: 23:

## (i) SEQUENCE CHARACTERISTICS:

5 (A) LENGTH: 59 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

10 (ii) MOLECULE TYPE: DNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 23:

TGCTCCAAGT GCCTCTGCAT TCTTTGGAAT GTCACGCATT GGCATGGAAG  
15 TCACACCTT 59

## (2) INFORMATION FOR SEQ ID NO: 24:

## (i) SEQUENCE CHARACTERISTICS:

20 (A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

25 (ii) MOLECULE TYPE: DNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 24:

TGCTCCAA GTGCCTCTGC ATTCTT 26

30 (2) INFORMATION FOR SEQ ID NO: 25:

## (i) SEQUENCE CHARACTERISTICS:

35 (A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid

- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

5

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 25:

TTGGCATGGA AGTCACACCT T 21

10 (2) INFORMATION FOR SEQ ID NO: 26:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 128 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

20 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 26:

CCAAACTGTC ACTAAGAAAT CTGCTGCTGA GGCATCTAAA AAGCCTCGCC  
AAAAACGTAC TGCCACAAAA CAGTACAACG TCACTCAAGC ATTTGGGAGA  
CGTGGTCCAG AACAAACCCA AGGAAATT 128

25

(2) INFORMATION FOR SEQ ID NO: 27:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 25 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

35

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 27:

CCAAACTGTC ACTAAGAAAT CTGCT 25

5

(2) INFORMATION FOR SEQ ID NO: 28:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 23 base pairs
- 10 (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

15

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 28:

CTCAAGCATT TGGGAGACGT GGT 23

20 (2) INFORMATION FOR SEQ ID NO: 29:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 base pairs
- 25 (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

30 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 29:

CAGAACAAAC CCAAGGAAAT T 21

(2) INFORMATION FOR SEQ ID NO: 30:

35

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 32 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

5

## (ii) MOLECULE TYPE: DNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 30:

10

CCATGGACCA AGACCTAACATC AGACAACCAT GG 32

## (2) INFORMATION FOR SEQ ID NO: 31:

15

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 72 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

20

## (ii) MOLECULE TYPE: DNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 31:

25 TGCCTATATG GAAGAGCCCT AATGTGTAAA ATTAATTTA GTAGTGCTAT  
CCCCATGTGA TTTTAATAGC TT 72

## (2) INFORMATION FOR SEQ ID NO: 32:

30

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

35

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 32:

5 TGCCTATATG GAAGAGCCC 19

(2) INFORMATION FOR SEQ ID NO: 33:

(i) SEQUENCE CHARACTERISTICS:

10 (A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

15 (ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 33:

TCCCCATGTG ATTTTAATAG CTT 23

20

(2) INFORMATION FOR SEQ ID NO: 34:

(i) SEQUENCE CHARACTERISTICS:

25 (A) LENGTH: 112 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

30

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 34:

TACGATACAT AGTCTACTCT TGTGCAGAAT GAATTCTCGT AACTAACAG  
CACAAAGTAGG TTTAGTTAAC TTTAATCTCA CATAAGCAATC TTTAATCAAT

35 GT 112

(2) INFORMATION FOR SEQ ID NO: 35:

(i) SEQUENCE CHARACTERISTICS:

- 5 (A) LENGTH: 23 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

10 (ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 35:

TACGATACAT AGTCTACTCT TGT 23

15

(2) INFORMATION FOR SEQ ID NO: 36:

(i) SEQUENCE CHARACTERISTICS:

- 20 (A) LENGTH: 22 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

25

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 36:

TAACTAAACA GCACAAGTAG GT 22

30 (2) INFORMATION FOR SEQ ID NO: 37:

(i) SEQUENCE CHARACTERISTICS:

- 35 (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

5 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 37:

TAGCAATCTT TAATCAATGT 20

(2) INFORMATION FOR SEQ ID NO: 38:

10

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 22 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

15

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 38:

20

GCCACCACAT TTTCATCGAG GC 22

(2) INFORMATION FOR SEQ ID NO: 39:

25

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 46 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

30

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 39:

35 AATTCTAATA CGACTCACTA TAGGGAGAAG TACCATCTGG GGCTGA 46

## (2) INFORMATION FOR SEQ ID NO: 40:

## (i) SEQUENCE CHARACTERISTICS:

5 (A) LENGTH: 51 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

10 (ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 40:

AATTCTAATA CGACTCACTA TAGGGAAGTG AAGCTTCTGG GCCAGTCCT

15 A 51

## (2) INFORMATION FOR SEQ ID NO: 41:

## (i) SEQUENCE CHARACTERISTICS:

20 (A) LENGTH: 49 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

25 (ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 41:

AATTCTAATA CGACTCACTA TAGGGAAGAA TGCAGAGGCA CTTGGAGCA 49

30

## (2) INFORMATION FOR SEQ ID NO: 42:

## (i) SEQUENCE CHARACTERISTICS:

35 (A) LENGTH: 46 base pairs  
(B) TYPE: nucleic acid

- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

5 (ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 42:

AATTCTAATA CGACTCACTA TAGGGAAGGT GTGACTTCCA TGCCAA 46

10 (2) INFORMATION FOR SEQ ID NO: 43:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 44 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

15 (ii) MOLECULE TYPE: DNA

20 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 43:

AATTCTAATA CGACTCACTA TAGGGGGGCT CTTCCATATA GGCA 44

(2) INFORMATION FOR SEQ ID NO: 44:

25

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 48 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

30 (ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 44:

35

AATTCTAATA CGACTCACTA TAGGGAAGCT ATTAAAATCA CATGGGGA 48

(2) INFORMATION FOR SEQ ID NO: 45:

5 (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 32 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

10

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 45:

15 CGCGATGTTC GTGCGTGGAT TGGCTTATCG CG 32

(2) INFORMATION FOR SEQ ID NO: 46:

(i) SEQUENCE CHARACTERISTICS:

20

- (A) LENGTH: 24 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

25 (ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 46:

GCTGTCATGC AACTAGAGAT GCTGT 24

30

(2) INFORMATION FOR SEQ ID NO: 47:

(i) SEQUENCE CHARACTERISTICS:

35

- (A) LENGTH: 32 base pairs

- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

5 (ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 47:

CCATGCGCCA CCACATTTTC ATCGAGGCAT GG 32